



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D412-664-203
Job Sheet 173464



Part No: D412-664-203

Job Qty: 1 ea

Part Name: Aft Crosstube - High



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 3/2/18

Job Tracking No:

Due Date: 3/16/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

Note: DWG REV F IPP Rev:E 04.02.16 Reformat; Added D3189-1 K/DS IPP Rev:F 06-03-29 Remove Coments on Pick List JLM IPP Rev:G 06.12.08 per ECN 886 EC IPP Rev:H 07-04-30 As per Rev D JLM IPP Rev:I 08-06-12 add comment in seq. 21 DD verified by:EC IPP rev J 11.04.21 DEO D412-664-243-E-1 EC verified DD IPP REV:K 11.10.03 DEO D412-664-243-E-2 DD verf:EC

Ship Via:

Bill of Materials

TRN 5031428



Container No: S059561



Part: D412-664-203

Job No: 173464

Serial No/Batch: S059561

Revision:

Inspector:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 04/10/18

AM Dart.Gagnon.Michelle

D412-664-203/173464/S059561

Job Routing									
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	3/8/18		0.00	0.00	Start Up Stores/Pkg-1		GP
110	Packaging	1 pcs	3/8/18		0.00	0.00	Packaging1-4		GP
120	CNC Bend Crosstubes	1 pcs	3/8/18		0.00	5.26	CNC Bend Crosstube		GP
130	QC	1 pcs	3/8/18		0.00	0.00	QC15		GP
140	Crosstubes	1 pcs	3/8/18		0.00	3.33	Crosstubes-2		GP
160	HandFXtube	1 pcs	3/9/18		0.00	1.03	HandFinish5		GP
165	QC	1 pcs	3/9/18		0.00	0.00	QC7-3		38 DAS
170	QC	1 pcs	3/9/18		0.00	0.00	QC5		38
180	Outsource	1 pcs	3/15/18				SKY002-VC	PB: 39607	CH 18/09/17
190	Packaging	1 pcs	3/15/18		0.00	0.00	Packaging2		AL 18/04/17
200	QC	1 pcs	3/15/18		0.00	0.00	QC5		38
210	SprayPaint	1 pcs	3/15/18		0.00	1.47	Spray Paint		06/05/2018
220	QC	1 pcs	3/15/18		0.00	0.00	QC14		AR MAY 06 2018
230	Crosstubes	1 pcs	3/16/18		0.00	3.33	Crosstubes-2		AR MAY 07 2018
240	QC	1 pcs	3/16/18		0.00	0.00	QC5		38
250	Packaging	1 pcs	3/16/18		0.00	0.00	Packaging1-4		38 MAY 16 2018
260	QC	1 pcs	3/16/18		0.00	0.00	QC4		38 MAY 16 2018
265	DC	1 pcs	3/16/18		0.00	0.00	DC		38 MAY 16 2018
270	Packaging	1 pcs	3/16/18		0.00	0.00	Packaging3-2		38 MAY 16 2018
280	QC21-FG	1 Ea	3/16/18		0.00	0.00	QC21		21 MAY 17 2018

Part Op 120 - Bend tube as per Dwg D412-664-243 using CNC bender program 412-aft and Folio FT010

Descriptions: 140 - 1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551 and drill table DT8577 using #9 holes as per QSI 10 to install towers. 2-Ream hole to finish size in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes. 3-SCRIBE PART # & BATCH # ACCORDING TO NOTE 6 4- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243

160 - ***IMMEDIATELY AFTER GRINDING***

170 - INSPECT ENGRAVING AND BATCH #

180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

190 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

200 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D412-664-203

210 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** **VERIFY BY _____ BATCH # TO MATCH W/O 138687

1-Prime inside and outside crosstube as per QSI 005 4.2 AND DWG

PRIMER: _____ START TIME: 138846 2-Paint outside crosstube with White Imron as per DWG D412-664-243 and QSI 005 4.2 3- Apply clear coat after paint as per DWG

220 - Then, Wrap in plastic bag to protect from scratches

230 - Assemble as per Dwg D412-664-203 1- Install center support using scotch-weld DP460 per QSI 015, as per DWG. note 13. Install supports clamps using as per Dwg D412-644-243. Install clamp with rubber cushion as per DWG. note 14. ***ENSURE CLAMPS ARE ON TOP OF CROSSTUBE SUPPORT*** Torque clamps on support to 80-100 IN-LBS AS PER DWG. EXP DATE: _____

2- **IF NOT ALREADY PRESENT ON CHAFFING SHIELD.** Apply a thin coat of proseal 890 per QSI 015 on inside concave surface of chafing shield and let cure per manufacturer's instructions. Install prosealed chafing shield onto crosstube by applying a thin coat of proseal 890 onto crosstube. Be sure to eliminate any air gaps. Install and torque clamps on chafing shield to 40-50 IN-LBS AS PER DWG. EXP DATE: _____

AFTER FINISH CURE TIME 24H START CURE TIME: 18-4-7 FINISH CURE TIME: 18-4-8

240 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 24HOURS AS PER DWG.***

265 - Photocopy bluefile and create labels as per PPP D412-664-203 CHG 010

270 - Identify and pack for shipping as per PPP D412-664-203 *****Ensure tube is not packaged if curing time is less than 12 hrs, see step 27 for application time & date ***** Time & date of packaging: _____

Location: _____

280 - 1- *****LAY DOWN CORSTUBE ON TABLE AND PUT DT10302 PINS IN SADDLE HOLE FACING UP TO LOCATE CENTER OF CROSSTUBE***** Install center support using scotch-weld DP460 per QSI 015, as per DWG. note 13. Install supports clamps using as per Dwg D412-644-243. Install clamp with rubber cushion as per DWG. note 14. ***ENSURE CLAMPS ARE ON TOP OF CROSSTUBE SUPPORT*** Torque clamps on support to 80-100 IN-LBS AS PER DWG. 1- *****LAY DOWN CORSTUBE ON TABLE AND PUT DT10302 PINS IN SADDLE HOLE FACING UP, USE HOLE IN TAPE MESURE TO PUT IN PINS FOR LOCATING CENTER OF CROSSTUBE. ***** Install center support using scotch-weld DP460 per QSI 015, as per DWG. note 13. Install supports clamps using as per Dwg D412-644-243. Install clamp with rubber cushion as per DWG. note 14. ***ENSURE CLAMPS ARE ON TOP OF CROSSTUBE SUPPORT*** Torque clamps on support to 80-100 IN-LBS AS PER DWG.

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D412-664-203TRN	Crosstube Turning Detail	1 Ea (1 ea)	90-Start up Operation	
D2896-1	Support	1 Ea (1 ea)	230-Crosstubes	
D3189-1	Chaffing Shield	2 Ea (2 ea)	230-Crosstubes	
D3595-063-570	Rubber Cushion 0.63" Wide X 5.70" Long	2 Ea (2 ea)	230-Crosstubes	
MS21920-28	Clamp	4 Ea (4 ea)	230-Crosstubes	
MS21920-30	Clamp	2 Ea (2 ea)	230-Crosstubes	
AN6-40A	3/8-24 Bolt X 3" Long	4 Ea (4 ea)	250-Packaging	
AN6-41A	Bolt	2 Ea (2 ea)	250-Packaging	
MS21042L6	Nut	6 Ea (6 ea)	250-Packaging	
NAS1149D0663J	Washer	18 Ea (18 ea)	250-Packaging	

Handwritten notes:
 5019412
 50137321-0
 5068557-2 MS21042L6x4
 5068542x4 5024081x14

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D412-664-203TRN	1	4	0
230-Crosstubes	D2896-1 <i>F157195</i>	①	5	0
	D3189-1 <i>5019440 ①</i>	<i>25029775</i>	25	0
	D3595-063-570 <i>B164719-150</i>	②	31	0
	MS21920-28 <i>3024479</i>	④	99	0
	MS21920-30 <i>F4137963-4</i>	②	55	0
250-Packaging	AN6-40A	4	156	0
	AN6-41A	2	91	0
	MS21042L6	6	536	0
	NAS1149D0663J	18	1,740	0

Part Specifications				
Specifications could not be found.				

Plex 3/2/18 9:38 AM Dart.Gagnon.Michelle

SHOP COPY
RETURN TO
ENGINEERING

UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 173464

MAR 02 2018

Item	Qty -243	Part Number	Description
1	X	D412-664-243	CROSSTUBE ASSEMBLY (412 HIGH AFT)
2	1	D6009-129	CROSSTUBE
3	2	D3595-063-570	RUBBER CUSHION
4	1	D2896-1	SUPPORT
5	2	D3189-1	CHAFING SHIELD
7	4	MS21920-28	CLAMP
8	2	MS21920-30	CLAMP (OR MS21920-32)
9	A/R	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD
10	A/R	PROSEAL 890 B-2	SEALANT

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 124.100±0.020 (BEFORE BENDING)
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C8-2, HATCHED AREA)
PAINT OUTSIDE PER DART QSI 005 4.2
AFTER PAINTING, REMOVE MASKING AND APPLY MATTE CLEAR COAT
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: DART P/N "D412-664-243" AND B/N ON INSIDE OF CUFF PER QSI 044 6.4 (VIBRATING STYLUS)
- WEIGHT: 47.0 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. DO NOT GRIND TUBE AFTER SHOT PEEN.

TURNING

- WHEN TRANSITIONING TO STOCK MAT'L, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.

BENDING

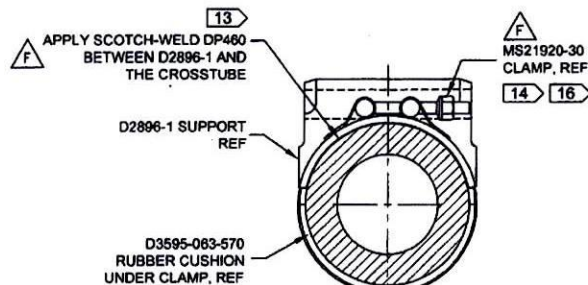
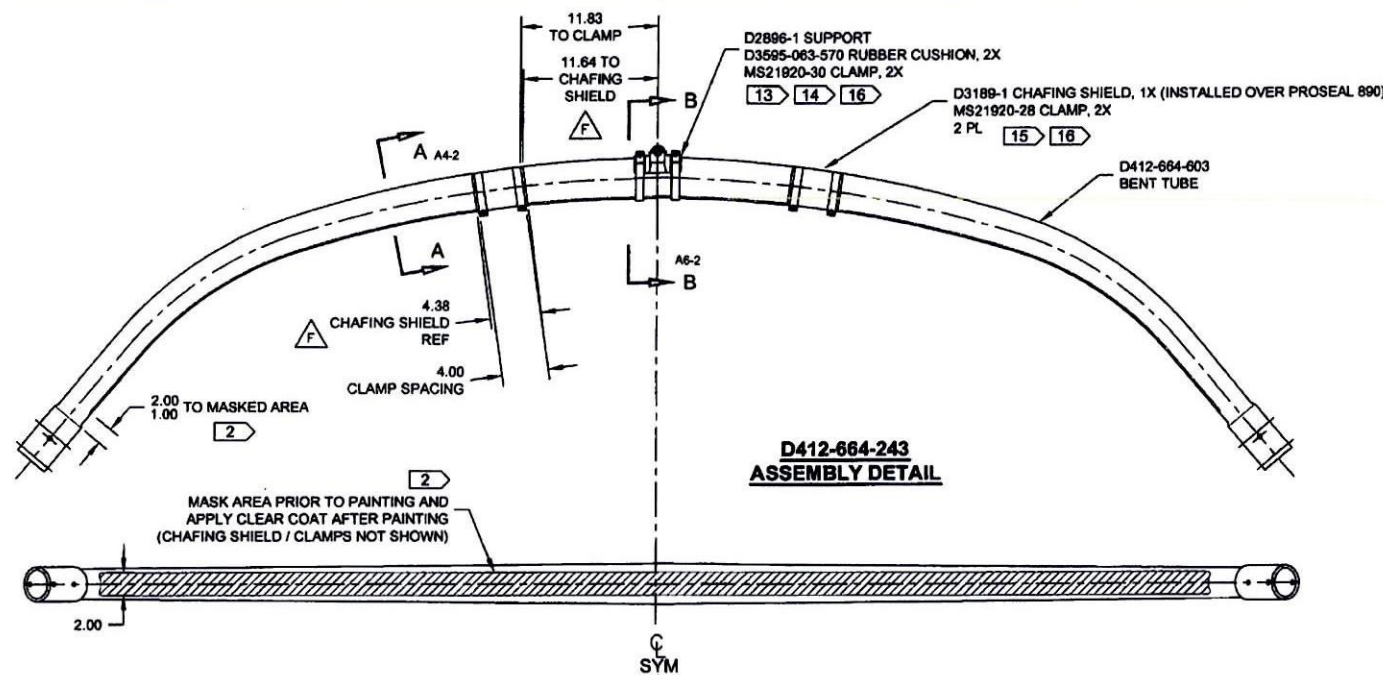
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7% (BASED ON O.D.) IN LOWER HALF OF R30 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038. TO BE PERFORMED AFTER FINAL POST-BEND GRINDING. ANY ADDITIONAL GRINDING REQUIRES ANOTHER LPI INSPECTION.

ASSEMBLY

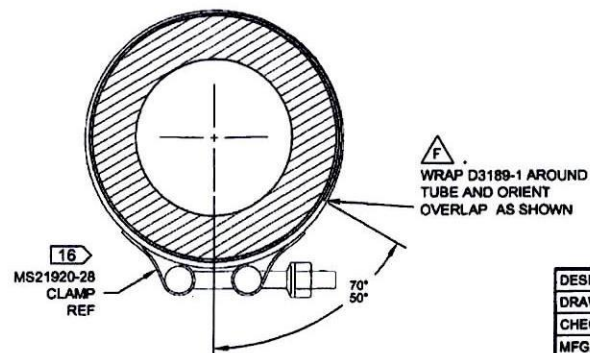
- INSTALL D2896-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015.
- INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE THE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3189-1 CHAFING SHIELD AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEALED D3189-1 CHAFING SHIELD ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- TORQUE CLAMPS ON D2896-1 SUPPORT 80 TO 100 IN-LB. TORQUE CLAMPS ON D3189-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVES HAVE CURED FOR 24 HOURS.

RELEASED
2014-05-26

F	NOTES RE-ORDERED, SCOTCH-WELD WAS MAGNOBOND (C8-1), ADD CLAMP RETORQUE (A8-1). REMOVE ABRASION STRIP, ADD INSPECTION WINDOW (C8-1), CHAFING SHIELD NOW 4.38 WIDE (C8-2). ADD 7% CRUSHING (B8-1), CHG BEND HEIGHT TOL. TO ±0.25 (C1-3), CHG CUFF TOL. (D2-4), CLAMPS FLIPPED TO PREVENT CHAFING (B7-2, B7-3). INCORP. DEO E-2/4	CP	14.04.01
E	REFORMAT/REVISE GENERAL NOTES; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-048 (ZN A6-3); ADD TOLERANCE (ZN B6-3, C4-3, C8-3 & C5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	09.09.30
D	REMOVE D2732-058, CHANGE TO D3595-063-570	PH	07.03.09
C	REMOVE D2856-600-1087, ADD D2732-058 & MAGNOBOND 6398, MS21920-32 WAS MS21920-30	MB	06.10.27
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	01.10.17
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DW	DRAWING NO.	REV. F
CHECKED	DW	D412-664-243	SHEET 1 OF 4
MFG. APPR.	DW	TITLE	SCALE
APPROVED	DW	CROSSTUBE ASSEMBLY (412 HI AFT)	NTS
DE APPR.	DW	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	14.04.01		



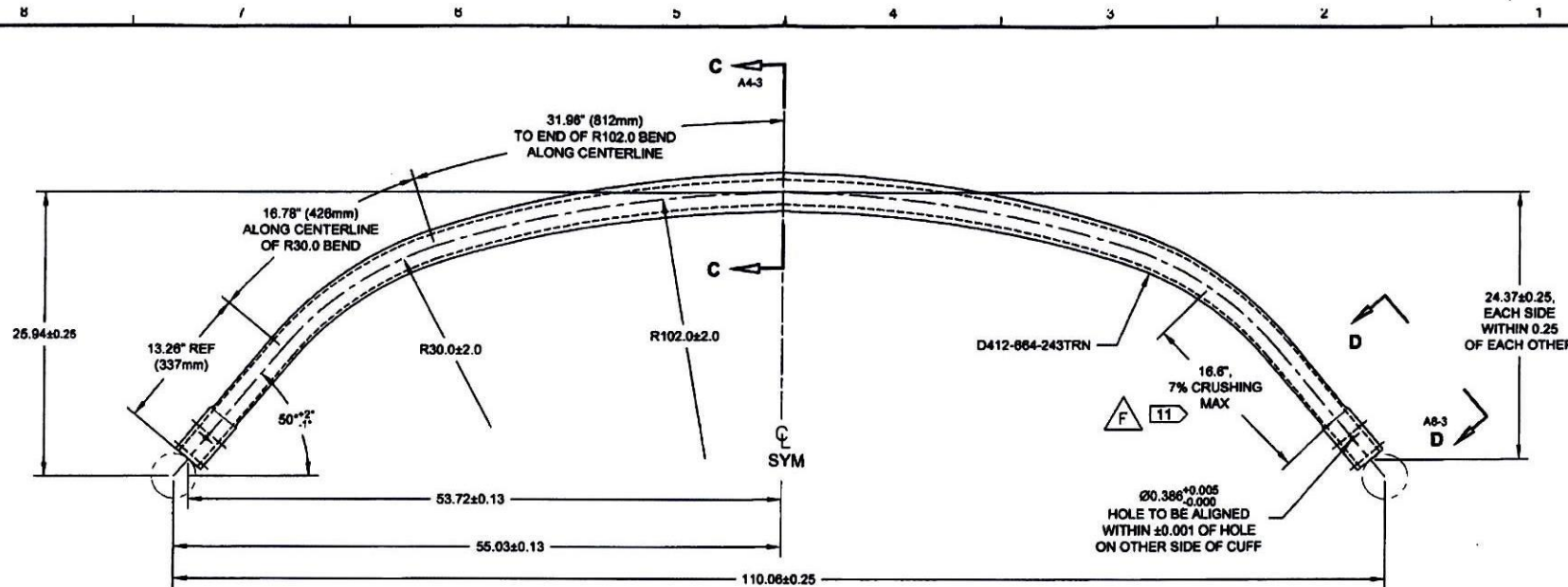
SECTION B-B D4-2
SCALE 4X



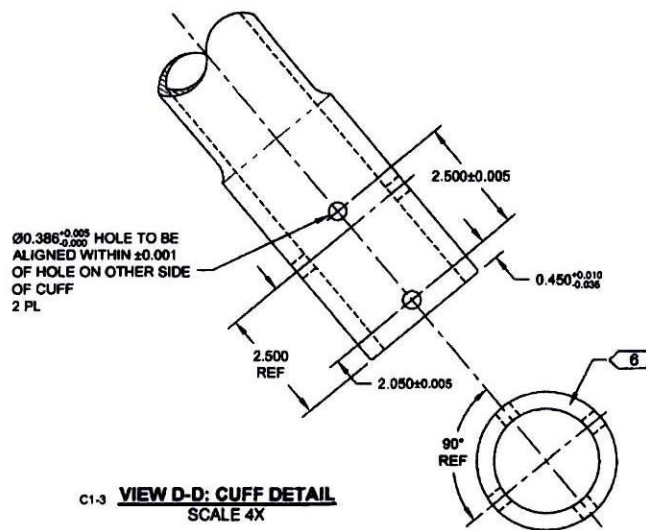
SECTION A-A D6-2
SCALE 6X

RELEASED
2014-05-26

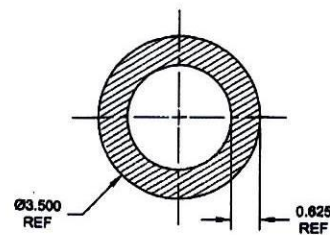
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D412-664-243	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASSEMBLY (412 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	



D412-664-603
BENDING AND DRILLING DETAIL



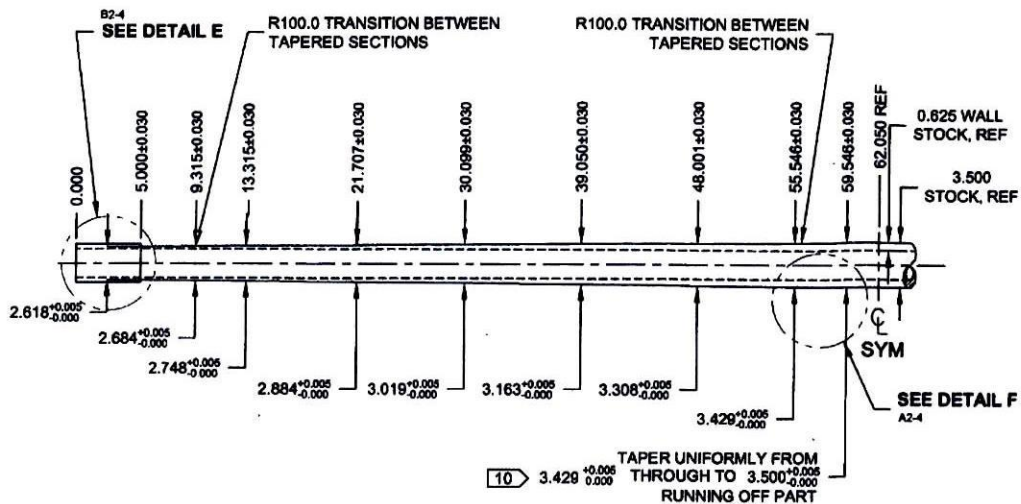
C1-3 **VIEW D-D: CUFF DETAIL**
SCALE 4X



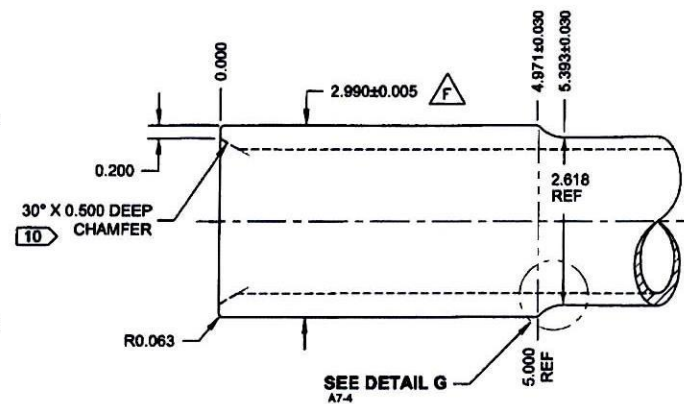
SECTION C-C D5-3
SCALE 4X

RELEASED
2014-05-26

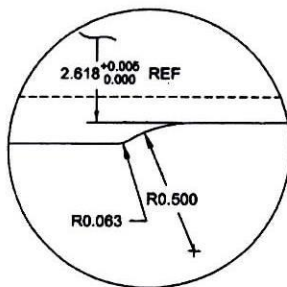
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D412-664-243	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASSEMBLY (412 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRESENTED AND COPIED BY THE DART AEROSPACE LTD IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	



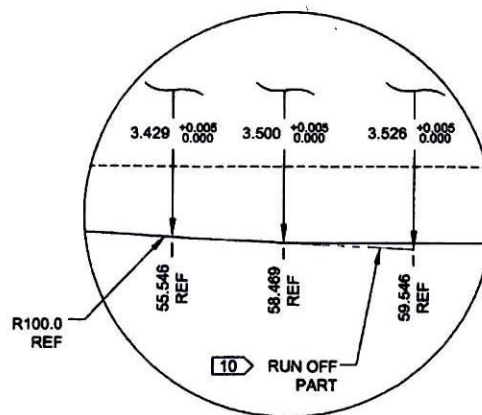
D412-664-243TRN
TURNING DETAIL



DETAIL E:
CROSSTUBE CUFF
SCALE 5X



DETAIL G:
CUFF TRANSITION
SCALE 10X



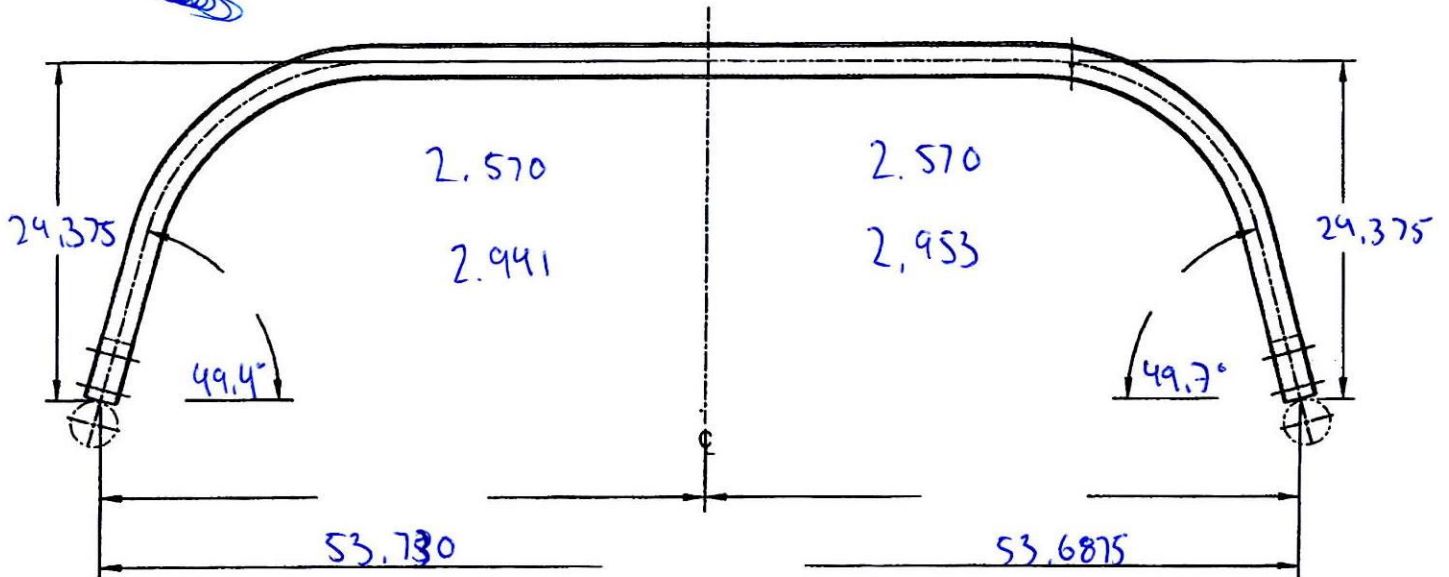
DETAIL F:
TAPER RUN-OFF
NOT TO SCALE

RELEASED
2014-05-26

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D412-664-243	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASSEMBLY (412 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2001 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED BY THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR ON COPIES OR COPIES AND NOT TO BE REPRODUCED WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD			

DART AEROSPACE LTD	Work Order: 173464
Description: Crosstube High Aft (412)	Part Number: D412-664-203
Inspection Dwg: D412-664-243 Rev: F	Page 1 of 1

Required Dimension	Min	Max
Height	24.12	24.62
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70
Bending Passes	8	--
Crushing	--	7%



	Side A	Side B
Bending Passes	12	13
Crushing	6.7%	6.9%
Comments		

QC15 Inspection	JW
Date	18-04-10

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. D	KJ/JLM	
C	10.02.02	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.09.08	Max crushing % revised	KJ	up



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039607**

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO039607

PO Date: 4/16/18

Due Date: 4/18/18

Purchase Order
Revision:

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

E-MAILED

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pynt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	173464	D412-664-203	Aft Crosstube - High *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	4/18/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	173465			Firmed	4/18/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	173466			Firmed	4/18/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	173463			Firmed	4/18/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
Sub Total:						4	0	4		\$835.00

Grand Total: \$835.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 4/17/18 7:53 AM dart.lavoie.chantal



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO35668	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO039607
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT (LIQUID PENETRANT CRACK TEST) ON THE FOLLOWING FOUR (4) CROSSTUBES:

P/N: D412-664-203 Aft CROSSTUBE-HIGH

- 1- JOB SHEET# 173463 2- JOB SHEET# 173464
3- JOB SHEET# 173465 4- JOB SHEET# 173466

Action Taken:						Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-4) AS PER ASTM1417M-13						APR 16 2018	LM
NO CRACK FOUND							
PEN (ZL-56, MPO13600), DEV. (SKD-S2, MPO11715), CLEANER (SKC-S, MPO19368)							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	
NA							

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		ACA/SCA Stamp 	Date:
Name:			APR 16 2018

PAGE 1 OF 1

Description: CROSSTUBE INSTALLATION, HIGH AFT

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					